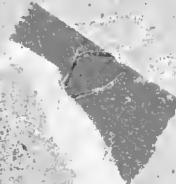


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Vernon Bailey

Aug. 1, 1906.

Left Washington at 4:30 C.Y.O  
for Wichita Mts., Oklahoma via St.  
Louis. Reached Charlottesville,  
Va., at dark. Rainy, cool,  
clouds on the Blue Ridge.

Golden rods & sunflowers in  
blossom & lower leaves of  
grass turning red.

Aug. 2. Woke up near Huntington  
~~W. Va.~~ and followed the Ohio River  
to Cincinnati, then via Indianapolis  
reached St. Louis at 9:30 P.M. about  
3 hours late. Took Frisco line  
out of St. Louis at 10:16 for  
Oklahoma. Good crops across  
Indiana & Ill. A cloudy day,  
cool & comfortable. Some rain.

Aug. 3. Breakfast at Springfield,  
Mo., fine farming country, slightly  
rolling, nearly all cultivated,  
small timber lots, rich soil, stony  
and flint land in places.

Good crops of corn, clover &  
timothy, wheat all harvested -

stubble fields being plowed.  
Apple orchards numerous and large,  
and loaded with beautiful fruit.  
Apple trees very thrifty & healthy.  
Pear and peach orchards common  
but less extensive or thrifty than  
the apple. Some plum & cherry  
trees. Garden vegetables good.

After passing Aurora we  
descended rapidly to a small  
river valley & stopped half an  
hour at Monett, a small town in  
good farming district, hilly,  
timber largely scrub oaks, black  
jacks, over the ridges, and elms  
& maples along streams. Corn fields  
& apple orchards predominating.

After crossing Grand River we saw  
the first pond of Nelumbo luteum, & beyond  
the river bottoms came to big prairies  
with such plants as Papilio, Amorpha  
canescens, Petalostoma, Esclypias,  
and prairie grasses. The crops  
are mainly corn, wheat & hay.  
From this on to Oklahoma City the  
country is largely prairie with  
timber along the stream bottoms.

ed over some low ridges.  
It is all a settled region with  
large farms and much of the land  
under cultivation. In a few sections  
considerable stock is raised, but  
generally it is a farming region.  
Much ~~the~~ wild prairie hay is cut &  
hauled and shipped. Corn is the  
common crop on uplands and on  
the bottom lands cotton was first  
seen after crossing the Verdigris  
River and then was common all  
the way. It is just in blossom  
and in fine condition, 2 to 4 feet  
high. Considerable Millet, Cagger  
corn & Sorgum is raised and an  
occasional field of Alfalfa is seen.  
Large fields of brown corn were  
seen near Oklahoma City. The  
grain has been harvested long ago  
and is in stacks or has been  
thrashed & only straw stalks  
remain & the stubble is being  
plowed. In places considerable  
has been raised, apparently mostly  
wheat. Fruit trees are seen  
at many of the farms but rarely.

in small orchards for home use. Some apples are less thrifty than in the Ozark region, but peaches are more abundant and are usually loaded with fine fruit. At Chandler teams were hauling loads of peaches to the station for shipping in cars. We tried them & found them delicious. They sold at 8¢ a basket. A good many young orchards were seen of peach & pear trees in cotton fields.

The soil is mainly heavy red clay, very rich and productive, but of crops & vegetation but not of mammals. No signs of any wild species were seen until a sandy strip of bottoms was crossed at 2pm when Grinnell hills were first seen. Not a fox, rabbit or even a cottontail was seen.

The first reisortail was seen near Red Fork & they were common the rest of the way. For other bird & plant notes see note book.

Reached Oklahoma City at 7 P.M. - went to Hotel Rebach, a very satisfactory place

Aug. 4. Oklahoma City is a very substantial town of 40,000 people, good stores & hotels & asphalted streets. Did some shopping & took train at 9:30 A.M. for Cache. The country is mainly open and noticeably more arid as we go west. The trees are dwarfed & restricted to crevices & river bottoms. They are mainly *Ulmus crassifolia*, *Juglans*, *Populus fremontii*, *Quercus texana*? (Post oak) *Magnolia*, plum & grape. On the wide sandy flats of the Canadian River scattering Cottonwoods & willows are the principal timber, but the other species form strips of dense, low forest along the sides of the valley & in side gulches.

The first Mosquitos and Cacti were seen just before reaching Cache.

Prairie dogs were first seen near Fletcher, a 20 acre colony a mile west of station, a few more west of Elgin and others at Ft. Sill & Cache. Groups hills were common in many places from Oklahoma to Cache. and two colyotes were seen near Cache.

Small & scissor tails, mockingbirds,  
Shrikes, crows, meadowlarks & cardinals  
are common. The first *Bubo swainsoni*  
was seen near Ft. Sill.

Corn & cotton are the principal  
crops, but some grain & considerable  
Sorghum, milo maize, millet & hay  
are raised. Cotton is generally  
small & neglected. Much of the land  
is not cultivated & much that is  
is rented from Indians & poorly  
cultivated. At several stations  
freight cars were being loaded with  
watermelons and some young orchards  
are promising.

At Cache we found Mr. Morrissey  
in town, hired a team & started for  
his place on the Forest Reserve, 12  
miles north of town. Started at 3 P.M.  
& reached there at 7. Rained most  
of the way, roads slippery but not  
bad. Found his place in a  
beautiful valley on Cache Creek  
close to Elk Mountains.

Aug. 5 Sunday, Rained nearly all day so my man did not come to go for wolves. Staid indoors most of day. Climbed to top of Elk Mtn. & collected plants. Went 550 feet above ranch & not to top. The peak is probably 150 feet higher. The rocks are mainly rough coarse granite, in rounded masses, a great boulders.

Aug. 6, Mr. Morrissey, Mr. Wells & his son & I went over to the place where they killed the wolves July 4. Got skulls of the two of the pups & found some of the bones of the old ♀ which they shot but did not find. There were 8 pups. Six were killed and the old male & female. Two pups got away. Found no signs of wolves when these were killed, so went to another creek & set traps.

Mr. Wells tells me of his experience with sleepy grass with a lot of losses above Ruadosa and 7 miles N. of Cloudcroft. It was just like in-

Cactus 1275

300  
254  
252

2425 feet higher.

Aug. 7 Nothing in traps, nothing came along but one small possum. Rained hard.

Aug. 8 & 9 Nothing in traps and no tracks except at one trap where a coyote scratched the dirt off the spring. Took this up. Went on top of Elk Mountain with Mr. Morrissey. The highest peak is a great boulder so high that we couldn't get upon it. It is 750 feet higher than the ranch and the ranch is 300 feet higher than the Cactus which is 1275 feet. The mountain is of coarse granite in great masses and boulders - ledges - cliffs, very rough & picture-esque! Cold streams & springs come out of cracks in the rocks. Oak brush & junipers fill in the cracks between the rocks & grassy meadows & flats are common.

Looked over buffalo pasture & along creeks for sheep pasture.

Aug. 10 - Packed up & started for Cache but the train was late so we did not get away from there till 4 P.M. Reached Emporia & had to stay over night.

Lots of cotton all along also corn & copper corn & milo maize and grain stacks & stubble. Some fields of grain spoiled in the shocks. Hard rains have washed the roads & the railroad is so rough and uneven the train nearly jumps the tracks.

Dryden was blown to bits by a cyclone 2 years ago & 114 people killed but has built up again to a village of 1500. There are several cotton gins & a compress is being built.

Aug. 11 Left Snyder at 8:30 A.M.  
+ reached Enid at 3:30 P.M.  
The principal interest of the trip  
was in passing out of Mesquites  
and semi-ing into the humid  
division at just before reaching  
Hobart and again crossing a  
strip of mesquites and cactus country  
down the south side of the Cimarron  
Valley from near Cherryvale to just  
beyond Okeene.

From Cache to Snyder and  
so - Snyder to near Hobart the  
country is very similar, mainly  
open plains with much short grass  
and scattered mesquites, some  
probably pear, & *Yucca glauca* and  
*Euphorbia marginata*, *Poazalia trinervia*  
and *Dalea conosua*. The numerous  
rocky buttes and ridges are surrounded  
by scrubby post oak, black jack,  
and celtis, while along the streams  
in low lines of *Ulmus crassifolia*  
*Juglans nigra* (dwarf), *Populus*  
 *fremonti*, *Negundo*, *Salix nigra*  
and grape + sunash form <sup>wooded</sup> lines of  
timber across the plains.

In going from Snyder to Hobart we  
pass through several gaps in the  
western extension of the Wichita Mts.  
and see scattered ranges and buttes  
stretching as far to the west as the eye  
can reach. These hills are  
almost continuous with the north  
line of the escarpment of the Staked  
Plains and would form a ready  
line of extension for mule deer.

The crops from Cache & Snyder  
and thence north to Hobart are  
mainly cotton, corn, milo maize,  
kaffir corn, some millet + a few fields  
of alfalfa, melons, sweet potatoes, and  
peaches. Grain stalks and stubble  
fields are common and in many  
fields the grain has rotted in the  
shocks from the excessive rains.  
Cotton is said to be the best crop  
and cotton gins are found at most  
of the towns and some bales left  
over from last year's crop.

Cotton is now in blossom and  
looks promising when well tended.  
Corn is good & nearly ripe.

Giant has been heavy and all crops look well. There has been far too much rain this summer, but usually the climate is dry. The country is well settled and largely under cultivation or pasture. Good sized towns are of frequent occurrence.

Pigalove cellars accompany most of the houses & the corn leaves are generally torn by birds.

From Hotart north to the Canadian River the country is mainly open prairie, or tall grass plains with scant lines of timber along the streams. North of the Canadian river a long stretch of scrub oak covered sandy soil extends west of the way to Carlton north of the North Fork. Then it ~~is~~ prairie again to Enid. Timber along the streams is much the same but the prairie grass is of the tall coarse kinds with rarely short grass patches.

Crops are good and cotton continues as far north as Custer City, then only a few small fields were seen north to Eagle City, then no moreorthway to Enid. Corn & small grains are the principal crops with lots of kafficorn, sorghum, milo maize, and some millet & alfalfa, abundance of peaches and farther northward good apples.

The country is fairly well settled and good farms are numerous.

Enid is quite a town with many substantial buildings, probably 5000 or 6000 people. Had to wait from 3:30 to 8:25 for train to Shattuck and.

Reached Shattuck at 3 P.M. next morning after a tiresome night's ride.

Aug. 12.

Drove out to Mr. W. F. Adams' place at Ironbed Lake, 5 miles west of Slattech and found a delightful place to stay.

The beavers have dammed up Ironbed Creek and made a long narrow lake that is full of bass. The river flats are covered in places with fine old cottonwoods and below the lake with a grove of young cottonwoods & willows. Wolf river is a wide bottomed sandy stream that spreads a little water over a great deal of sand. The valley is sandy and ridged by water wash and wind drifts. The prairie river is a gypsum escarpment and back of this are open plains covered with fine grass.

The country is all taken up and farms are scattered over it. A small part of it is cultivated and good crops are raised this year.

There has been too much rain and much grain spoiled in the shock.

We saw no cotton, but were told  
that considerable is raised &  
that it grows well. There are cotton  
fields at Slatteck, Woodward,  
Canadian, Gage and several  
other towns along the R.R.  
Broomcorn is the best crop  
and is raised in great quantities.  
It sells at \$50 to 100 dollars a ton  
for brooms. As high as 256 cars  
of broom corn have been shipped  
in a season from Slatteck.

Good corn is raised in considerab.  
quantities and lots of wheat & oats.

The wheat is sown in fall, and the  
plowing is now well along.

Melons and vegetables are raised in  
considerable abundance and good  
peach orchards were seen.

Wild goose-plums are abundant on  
the sand ridges and mustard grapes  
form thickets, 2 to 4 feet high  
of stubby bushes loaded with  
ripe grapes. Another species of  
smooth leaved grape grows on the  
trees and almost smothers elm &  
blackberry trees with its load of vines.

Aug. 13 -

Set a beaver corral trap by  
encircling a bunch of cottonwood  
trees they had been cutting with  
wire cutting and putting a drop  
gate across the trap attached to  
supported by a ~~log~~



Corral 20 feet across & 3 feet  
high, staked to trees & staked to  
ground at edges.

Aug. 14 - No beaver came to the  
trap last night so we left it set  
and returned to Shattuck in evening.  
Mr. Adams is to keep the trap  
set for a week or two and if it  
does not work will try a corral  
trap across a water runway  
with entrance doors at  
both sides. He is anxious  
to get the beavers if it can  
be done so as not to scare  
the others. He has many offers  
of 50 and 100 dollars a pair  
for beavers to stock streams  
with, mainly from ranchmen  
in the counties west of him.

Aug. 15 Left Amarillo at 3 a.m.  
and reached Dalhart at 9 a.m.  
Had to wait till P.M. for train  
to Dalhart on F.W. & D.

The Staked plains are big and  
beautiful as ever with their rich  
carpet of short grama grass.  
There has been lots of rain & the  
numerous basins are full of  
water & waders. Sorgum,  
milo maize & kaffir corn are  
the principal crops raised at  
the ranches & are looking well.  
Some peach orchards of ranches  
are bearing fruit, but many trees  
show dead tops.

To Fairy rings on the plains  
are abundant & large and  
full of big mushrooms.  
Some of the rings are 50 or  
100 feet across & some of  
the mushrooms look to be a foot  
across. In some of the rings  
there are apparently 100 or more  
mushrooms & in all the  
circles of dark grass is very  
strongly marked.

On leaving Amarillo we follow down  
a gulch and soon strike mesquites  
which continues in considerable  
abundance to just west of the slopes  
beyond the Canadian River. It  
is surely more abundant and larger  
than it was 7 years ago when I was  
over the ground last. Even the little  
bushes 2 feet high are loaded with  
conspicuous red bean pods.

The wide red sand bed of the Canadian  
River & the scattered groves of old  
gnarled cottonwoods along its banks  
form a strong contrast to the  
eroded, badland banks & buttes  
along the sides of the valley.  
This valley is still inhabited  
by cattle mainly.

On the high prairie north of  
the river valley farms are increasing  
in number but grazing is still  
the main industry. Fields of  
Milo maize & kaffir corn at the  
scattered ranches are doing well  
this year and some fields of corn  
are seen.

Culicaris are abundant  
in flocks of 20 & 100 over this  
plain to Dahlhart & in the night  
we heard screeches over the town of  
Dahlhart.

Aug. 16

Left Dahlart at 2 A.M. and  
woke up at Meameeri, lots of rain  
and vegetation thriving.  
Reached Santa Rasa about 8 & followed  
slowly up west slope of Peas Valley  
to top of open plain. Scrubby  
mesquite clings to south slopes  
all the way up this slope but was not  
seen beyond.

The top of this Pastura plain  
is almost as level as the ~~flaked~~  
Plains but less evenly carpeted  
with grass. Gutierrezia & other plants  
take more of the ground.

The Pintado and Leonita mesas  
to the north are covered with juniper  
& nut pine but the grass shows no  
taller timber until yellow pines are  
seen over the top and north slopes  
of the buttes N.W. of Duran.

It is then common along the top  
& north slope of a long ridge S.E. of  
the R.R. before we reach Torrence &  
on buttes S.E. & S.W. of Torrence &  
on the Sierra Gallinas to the west.  
Nut pine & juniper cover the  
west slopes & surround the

bases of the buttes & ridges.  
It always has oak 2 feet high  
among thickets near Durango  
and *Rhus trilobata* is common.

The surface rock is generally  
limestone and numerous large sink  
holes occur from Leoncito to Huanca.  
There should be extensive caves.  
Cattle, horses & lots of sheep  
& a few goats were seen.

At Torrense we change to  
the Santa Fe Central & turn north  
past the Gallinas mts., a high  
timber covered range with lots  
of tall timber, yellow pine &  
probably other trees. Then  
the Mesa Jumane follows along  
our left and on its highest North  
slope are tall trees, apparently  
yellow pine but rather distant.

The Anchos & Pedernal Hills  
rugged up over 1000 feet high  
on the contour maps & are an  
important range on the Land Office  
maps do not exist. In their  
place is a level plain, sloping  
down to the Salt Basin.

The Salt Basin is a great  
alkaline valley bounded on the west  
by the Mangan Hills, a high and heavily  
forested range. Numerous snow  
white salt basins were seen  
and much of the ground was white  
with alkaline. *Atriplex canescens*  
is abundant over the valley, also  
*Gutierrezia*, *Helianthella* salt grass.

At Willard the new line of the  
Santa Fe crosses and runs west  
between the Mangan mts. & Mesa Jumanas.

At Estancia we stopped for dinner  
& got a poor layout at a good price.

Grass is poor, cattle are scarce  
and a few poor ranches have little  
growing or other visible property.

Some sheep & few goats were seen.  
New ranches are being started & people  
seem to have faith in farming here  
by dry farming methods. Much of the  
soil is firm & rich and dry farming  
may succeed. The valley is low &  
very extensive.

At Morazity the branch road  
runs west to Abiquiu and  
open valley contains.

On the west the Sandia and  
Tuceros Mts. and a bunch north of  
the Tuceros show tall timber &  
this lower slopes which are  
covered with short pines & junipers.  
At the north end of the valley  
*Opuntia arborescens* is abundant  
but junipers & short pines follow  
the rim over which we pass  
to descend the slope in to  
Cimarronita Valley, which again  
is open. Crossed the Santa Fe  
R.R. at Flora Mts & thence up  
through junipers & open valleys  
& Santa Fe.

Aug.

Aug. 17. Left Santa Fe at 11 AM &  
reached Española at noon or a  
little after. The valley is in  
fine condition, ~~but~~ with good crops.  
But there has been no rain for about  
6 weeks. The sand is dry & blowing.

Aug. 18. Busy getting outfit in shape  
to start, getting supplies etc.

Aug. 19. Could have started today  
but as it was Sunday decided  
to wait till morning & finish up our  
reports and letters.

## Canadian Plants

### Santa Clara Cr. in James Mts.

<i>Picea pungens</i> - 18 mi. -	8000 N.E.
<i>Picea engelmanni</i>	8500 N.E.
<i>Abies concolor</i> - 18 mi. -	8000 N.E. -
" <i>arizonica</i> 22 mi. -	9000 N.E.
? <i>Psudotsuga</i> - 18 mi. -	8000 N.E. - 10000
<i>Populus tremuloides</i> - 18 " -	8000 N.E. - 10000
<i>Acer glabrum</i> - 18 mi. -	8000 N.E. -
<i>Alnus</i> - 10 mi. -	7000 - 8200
<i>Betula occidentalis</i> - 10 mi. -	7000 - 8200
<i>Sambucus</i> 19 mi.	8300
<i>Amelanchier canadensis</i> - 18 <del>mi.</del>	8000 N.E. 8600
<i>Ribes d. irreguum</i> 18 mi.	8000 - 9000
<i>Oxalis violacea</i> 18 mi.	8200 N.E. -
<i>Viola canadensis</i> 18 mi.	8000 - 9000
<i>Ribes (acutifol)</i>	9000 -
<i>Ribes oxyacanthoides</i>	9000.
<i>Potentilla pentaphylla</i>	8500 -
<i>Veratrum</i>	

## Transition Plants

(distances from Esparza)

### Santa Clara Canyon, James Mts.

*Pinus ponderosa* - 6500 N.E. to 10000 S.W. 10 mi. to

? *Pseudotsuga* - 8000 N.E. to 9

18 mi. to 1000

? *Pinus flexilis* - 8500 S.W. to 1000

? *Populus angustifolia* - 10 mi. to 19 - 6500 - 8100

? *Betula occidentalis* 10 mi. to 20. 6500 - 8100.

? *Alnus* " 23 " - 9000

? *Quercus gambelii* " " 6500 - 9000 S.W.

? *Pseudocarya monspeliaca* - 15 mi. to 20. 7000 to 9000.

? *Prunus* - chokeberry - 8000 - 9000 - 18 mi. to 20.

? *Cornus asprea* - 15 to 20, 7000 to 8500.

### Corylus

? *Rubus* (as Hondo) 7 - 19

? *Holodiscus* - 18 to 22 - 8000 to 9000

? *Berberis* "spicata" - 12 mi. to 19 - 7000 - 8000

? *Salix cardata* - 7 mi. - 6500 -

? *Gilia aggregata* - 12 mi. to 19 - 7000 - 8500

? *Pentstemon* - " " " .. ..

? *Solanum tuberosum* - 18 8000

? *Hops* - 18 - 8000

## Upper Sonoran Plants.

### Espanola up Santa Clara Cañon.

*Populus fremonti* - along Rio Grande U.

*Salix nigra*? - " " .. + 12 mi. up S.C.

*Rhus trilobata* - Throughout upper Sonoran

*Fallugia paradoxa* - " "

*Pinus edulis* - Foothills to 8500 S.W. - 12 mi. up canyon <sup>in bottom</sup>

*Juniperus occidentalis* - " " "  
" *seepulorum* - " "

*Quercus* (var. <sup>6500</sup>) 12 mi. to 8500 S.W.  
" *gambelii* - 12 mi. to 18 mi.

*Cercocarpus parvifolia* - 7000 S.W.

*Nigundo* a few at 7 & 12 mi.

*Ribes cereum* - 7 mi. to 8000 + S.W.

*Ribes* (Same as on tends) 7 mi. to 18 mi. in bottom

*Philadelphus microphylla* - at 8000 S.W.

*Opuntia arborescens* - Rio Grande to 8000 + S.W. at 18 mi.

*Opuntia* (big) - Valley

" (small) - " to 8000 S.W. - 18 mi.

*Yucca glauca* - Valley to 7000 + - 15 mi.

*Bigelowia* <sup>blueata</sup> - 7000 - 8000 S.W. - 15-19.  
green - Valley up 7 mi. +  
gray - " " " + ?

*Bigelowia canescens* - Valley up 18 mi. - 8000 +

*Croton* (var. 1000) " up 18 mi. in bottom S. slopes.

*Cleome* (1000) " " " "

2. Upper Sonoran Plants

Devils horns - Espanola, con.

Datura (big) .. .. "

Cereocarpus perifolia - at 17 mi.

Want common bear to same

Aug. 20 Loaded up and started  
up the Santa Clara canyon,  
but found the roads rather heavy  
and sandy in places. One of  
the team horses balked & we  
made slow progress. Came  
about 15 miles and camped  
under beautiful yellow pines  
some 4 miles above where the  
first were seen on the cold slopes  
and in the creek bottoms.

At Espa<sup>n</sup>ola, the country is all  
upper Sonoran with *Populus fremontii*  
*Salix nigra* along the streams, *Bigelovia*  
and *Opuntia arborescens* over the valley  
and junipers & nut pines on the ridges.  
Up the Santa Clara Canyon about 5 miles  
we begin to strike a few alders, birches,  
and boxeldirs & *Salix cordata*, while  
the side slopes are mainly clothed with  
nut pine, & *Juniperus monosperma* & a  
few *J. scopulorum*. About 17 miles  
up the canyon the first yellow pines  
were seen in a good stand along  
the bottom of the valley & soon a  
few on N. slopes. *Quercus gambelii*  
became common near the same

place where the pines began & a blue  
live oak (Q. ) also becomes  
~~common~~ but keeps on hot slopes  
with nutpines & junipers.

Camped about 3 P.M. under beautiful  
tall pines close to the creek. Hopped  
the horses and turned them out on  
short but good gramma grass.

~~Det. 2 Eudaimos + a hummer~~

Aug. 21. Found lots of birds in the  
canyon ad slot 2 Eudaimos & a Sceloporus,  
saw Thornapple hills, & woodland mists  
& heard a Catherpes grammurus.

Continued up the canyon about  
2 miles & the team horse balked &  
wouldnt start again so we camped  
& sent the team back for another  
horse. Have a beautiful camp ground  
on a high bank of the creek under  
yellow pines & Populus angustifolia. Open  
plats have good grass for the horses &  
upper Sonoran south slopes come down  
on one side while Transition timber covers  
the bottom of the narrow valley & the steep  
slope south of it.

The creek is clear cold & rapid  
and usually too wide to be jumped across.

Set traps near camp.

Found plenty of signs of Sciurus aberti  
but saw none of the squirrels.

Rained hard in afternoon.

Aug. 22 - Caught only 2 Motacillas  
Saw lots of birds. Rode a mile or two  
up canyon & where *Pseudotsuga*, *Abies*  
& *Picea* begin on cold slope.

Rained in night and every little  
while all day.

Max returned with a new horse about  
noon, but decided not to move camp  
today.

Aug. 23, Moved camp about 2 miles  
up canyon where the team faltered  
again. Tried to back wagon down  
hill & smashed a wheel, so we  
camped & sent man back to  
get wheel fixed & get a new horse.  
We are here a mile below where  
Santa Clara Canyon narrows up  
and just at the extreme lower  
point of Canadian gone on  
the cold N-E. slope, *Picea*,  
*Abies*, *Pseudotsuga* & *Acer glabrum*  
& aspens begin just across  
the canyon.

Found a bee tree, lots of  
bear sign, saw deer tracks  
Set gopher traps in the patches  
of wild Potatoes that grow

in abundance on the little rich  
soiled flats along the creek,  
and evidently served as Indians  
gardens in prehistoric times.  
The potato vines stand 6 inches to a  
foot high - have white flowers  
grow largest in mellow black  
soiled places & have new potatoes  
as large as sparrows eggs.  
At the base of each vine is a  
little old <sup>brown</sup> potato from which the  
plant started. The new tubers are  
full grown, pure white, not covered  
with brown specks. They have several  
eyes but one plant only grows for  
a tuber. When boiled they have a  
real potato taste but are rather  
solid.

*Thomomys fulvus* are numerous  
& one caught in the patch had  
flowers, leaves & the white tuber stems  
in its pockets.

Aug. 24. John did not come  
back, but we leave camp and  
go where we please. Went up  
the canyon 3 or 4 miles through  
the narrow part & found it beautif.,  
cold, narrow, & full of Canadian  
pine trees. The creek roars  
& tumbles down it. The road  
is stony but not very bad.  
The sides of the canyon are steep  
and on the north slippery, one to two  
thousand feet high, back to the  
rain slabs.

Aug. 25. John came back in afternoon with a new horse & the wheel fixed. I have a good line of traps out & so decided not to move camp at once.

In evening went over and cut into bushes, but the bees were cross & stung us so we gave it up till morning.

Found an old rock house on sunny side of canyon near camp, evidently prehistoric, but used lately to camp in. The ruins of an old front wall still stand, but now only the open cave part is used.

Aug. 26. Took a saddle horse & rode up canyon about 10 miles nearly to the divide and half a mile beyond the last water. Found bigger mountains than I expected, good camp spots and lots of country we want to work, extensive rock slides on cold slopes that are bare & suggest Hudsonian & almost a timberline. Passed many ranches that are abandoned & fences thrown open & are probably on Indian land. Got good notes on range of trees & plants & some on birds & mammals.

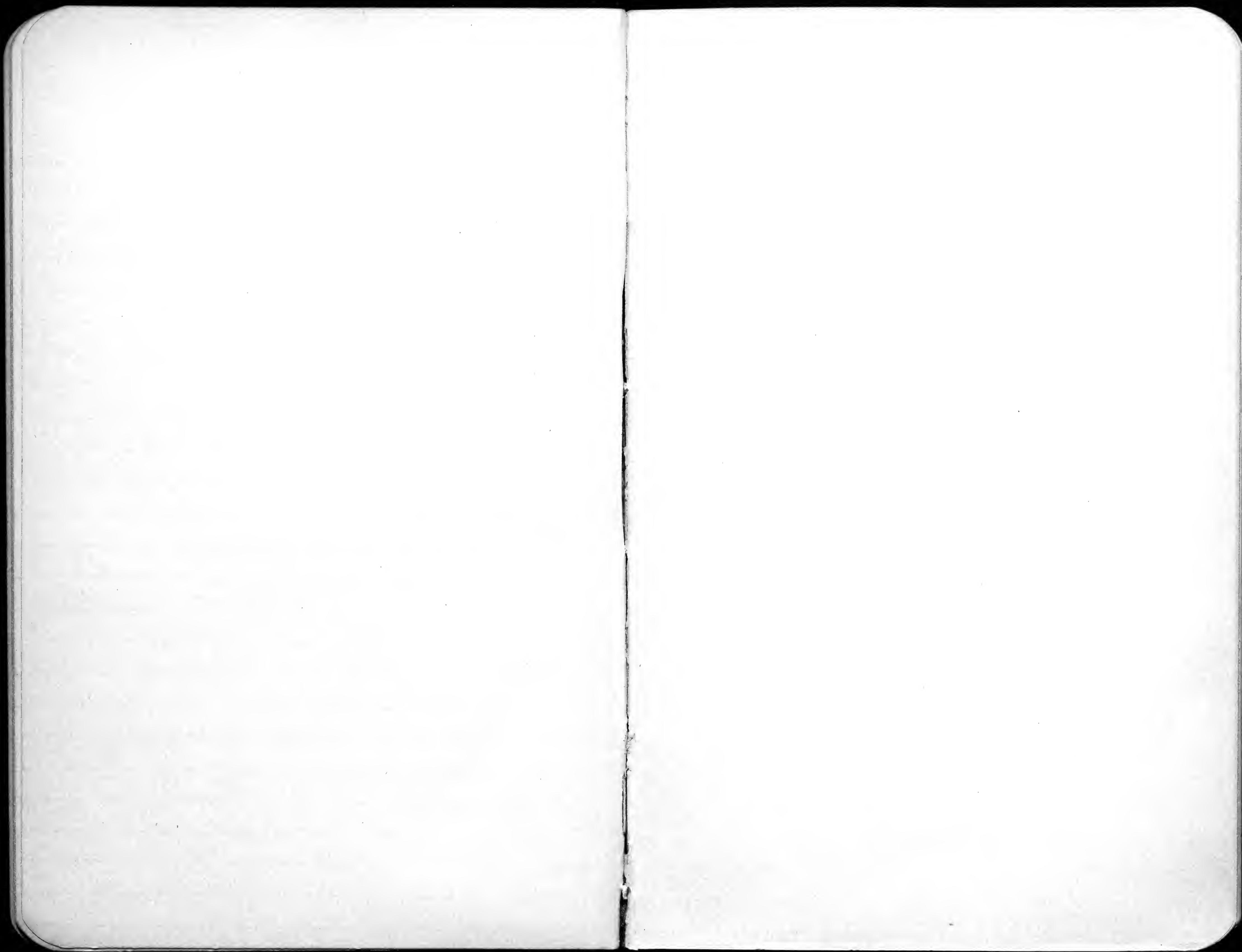
Returned to camp at 2 P.M. & made up skins & filled out plant lists & wrote up notes for rest of day. Didn't get time for any lithis.

Took honey out of bee tree before daylight, got sting a few times through gloves. Got all the honey we wanted, about a quart, & left the rest for bees.

Aug. 27. Moved camp about 6 or 7 miles up the canyon above the narrow part & camped in old field that has been thrown open at about 8500 feet. Yellow pines and transition zone species continue on hot slopes, but the valley is mainly Canadian, aspens & spruces. The canyon is rough but not very steep & took up this far. Divided the load & sent John back after the rest in afternoon.

Aug. 28. - Had breakfast beyond & started up the peak south of camp with a bag of traps. About 500 feet above camp struck great fields of solid rock of broken lava extending nearly to the top of the peak which is wrapped as 10400 feet. The top of the rounded peak is covered with timber and the south slope is open grassy pasture.

Canadian zone covers the top & north slope of the peak except for a trace of Hudsonian. *Saxifraga bronchialis* is the only real Hudsonian plant seen but the aspens disappear & the upper 200 feet of N.E. slope is somewhat



Dwarfed *Picea engelmanni* & *Abies arizonica*,  
& might be called Hudsonian. Aspens &  
even *Picea pungens* reach the top on  
the southern brow.

The view from the peak showed  
the Rio Grande Valley, Santa Fe, & almost  
to Albuquerque, but nothing west of the  
range. North of the Santa Clara  
a still higher peak rises with open  
grassy slopes on the south & timber  
along the crest.

Found cobstone eggs in  
the rock slides, but no signs of  
aristomys. Saw several deer tracks  
and one fawn track. Chipmunks go  
nearly to the top & Thomas' piñons to  
the top on grassy slope. Pine squirrels  
are very numerous - busy & noisy,  
comes in rattling down all through  
the woods.

Found no water above lower edge  
of rock slides and birds in scarce.

Aug. 29. Went to traps & got only a few of importance. *Microtus hordax*, *Eutamias* & *Peromyscus manicatus* filled the rest. Found fresh bear bed and signs in the next gulch below camp.

Aug. 30. Worked all day on expense acct.

Aug. 31. Went to Espanola to swear to account & get supplies. Started at 6 A.M. & got back about 8 P.M.

Sept. 1. Brought traps down into woods for *Ereotomys*. Shot birds & made up specimens. Rained most of day.

Sept. 2. Caught *Ereotomys*, *Microtus*, *Sorex*, *Peromyscus*, *Thomomys*, 2 species of *Eutamias*, *Calaoperomophilus* & *Pine equisetum*.

Sept. 3. Caught 2 more *Ereotomys* but both were young with broken skulls. Intended to move camp in morning but the horses hid in a brushy gulch & we did not find them till 1 P.M. Then moved 3 miles up the canyon to last water & camped at last base of yellow pines & *Fraxinus*.

Sept 4-

Climbed from camp at 9000 feet to top of peak N.E. of camp about 11000. This we call Santa Clara Peak as it is evidently the sun mountain of the Santa Clara Indians and is the highest peak in the range next to Cibolla Peak which is nearly equal in height. Found no water on the mountain above the head of Santa Clara Creek, but its south & west exposures are largely grassy slopes covered with tall, ungrazed grasses full of seeds. The first 1000 feet of my climb was through beautiful woods of spruce & fir & aspens, then over the grassy slopes to the top. Patches of *Picea pungens* are scattered over the slopes and on the N-E. side come up to the summit, where they are much dwarfed. Fir has swept most of the timber from the mountain and probably the balsams could not stand burning as the pungens did.

Found blue grouse on top & onthers, Ochetoras were abundant in rock slides

6

~~Sept 10.~~ Broke camp & ~~etc~~ followed up  
Santa Clara Canyon 3 or 4 miles to its  
headland over a low divide and  
down La Jara Creek to its junction  
with the San Antonio. Turned up  
half a mile into <sup>Valle</sup> Santa Rosa and camped  
by a big spring under the first spruce  
tree at 81500 feet by the contour map.  
Came about 16 miles. Camped at noon.

The head of Santa Clara valley is  
a beautiful valley, narrow, grassy  
without water, between a wall of spruce  
& fir on the south & scattered strips  
of aspens on the north.

La Jara Creek begins a mile below  
the summit & runs down a steep &  
crooked gulch for a few miles, then  
widens into a wider, grassy & meadow  
valley & then into the big open grass  
valley Santa Rosa just before joining  
the larger San Antonio.

The Valle Santa Rosa is a park like  
basin about 2 by 4 miles in extent, well  
watered and covered with luxuriant grass.  
A few cattle & sheep do not keep the  
grass eaten down noticeably & it stands  
one to 2 feet high, of the best varieties.

No one lives in the valley, as it is on the Boea Grant & is too high for farming.

Yellowpines & other transition zone plants grow on hot slopes only. The cold slopes are covered with spruce & aspens & the bottom of the valley is marked by Canadian zone plants, especially in the marshes, while most of the grasses are such as go up to 10,000 feet. See note book for list of plants. Frosty mornings at camp would indicate a Canadian zone climate.

Numerous old craters nearly surround the valley, some old & flat & others steep & broken cones. The ridges are mainly lava streams, old & broken up & generally overgrown.

A few trout in the streams do not bite readily but John caught a lot of little fish that in like shrubs & very good.

Set nine lots traps & 2 for Coysters & some for Hanover.

Cyprinops garnieri are numerous but kept mainly on the hot slopes.

Sept. 6 Took saddle horses & went  
about 10 miles south to top of Pelado peak  
& back, crossing an arm of San Antonio  
Valley & returning through Valle Grande.  
This is a superb park like valley  
4 x 5 miles in extent surrounded by  
high mountains & craters, well watered  
by numerous streams & springs,  
Covered with luxuriant grass &  
not over stocked. It also seems  
to be mainly Canadian zone with a  
ring of transition on the hot slopes.  
No one lives in it.

Pelado Mountain is a great  
dome shaped crater 11200 feet high  
mainly covered with Canadian  
zone forest of Spicers, aspens  
& firs. We found several streams  
on its sides, one starting at about  
10500 feet. There are numerous grassy  
pads throughout the forest and the  
upper slopes of the mountain are  
well mixed with strips of timber  
& patches of luxuriant grass.  
Rock slides of broken lava cover  
extensive areas high up & the top  
is stony but covered with grass & herbs.

There is no timberline & the *Picea*  
*engelmannii* & *Abies arizonica* are not  
dwarfed at the top as the *Piceas* are  
on Santa Clara Peak, which by the  
level seems to be 200 feet higher  
than Palado. See list of plants on  
top in note book.

Odocoileus were common in the rocks  
& we saw lots of deer tracks & at about  
11000 feet 4 old buck blacktails, all of  
a size, very large with full grown  
horns in the velvet. They were in  
the red coat, & as they stood 100 yds  
distant looking at us they seemed  
like elk & I looked carefully at the  
horns to make sure that they were not.  
The glass showed the velvet on them.

Counted 10 old coote bluegrouse  
& saw several fresh turkey tracks.  
Saw a panther track & some fresh  
bear tracks - stones turned over.  
Shot a *Lepus pictus* at 10000 feet  
& saw signs evidently of badger  
higher up. On the way home killed  
a large male porcupine & got back  
to camp after dark.

Sept. 7 - Made up skins most of day collected a few plants & wrote up notes in evening. Had prairie dog & rabbit for dinner & fried owl (Bubo) & bacon for supper & found both pretty good, the prairie dog better than the owl & the rabbit better than the P.D.

Sept. 8, Broke camp & followed down through the beautiful, grassy park like Valle San Antonio, then down the narrow James Canyon to San Antonio Springs & below to the mouth of the creek from Sulphur Springs and camped in yellow pines at 7700 feet. The canyon is rough and steep and picturesque and is filled with Canadian pine species & firs down to about 6000 feet to below San Antonio Springs. Then transition yellow pines begin and fill it as it opens out more & faces south. It is full of fir timber all the way and superb yellow pines below.

Road pretty rough & steep

Sept. 9 Said to be Sunday, when we  
inquired at James Springs.

Continued down the canyon which  
grows steeper and narrower about  
4 miles to the saw mill at junction  
of South Fork with the main James.  
Here on hot, steep, barren S.W. slope  
the Junipers & nut pines & blue oak  
begin and mark the extreme upper  
point of Upper Sonoran. Transition  
continues on cold slopes and top  
of mesa walls to James Hot Springs.  
Then the valley opens out more &  
is all Upper Sonoran, with 3 species  
of juniper, nut pine, blue oak, & the  
full set of Sonoran plants. Little  
farms occur at intervals &  
small fields of corn & <sup>other</sup> alfalfa &  
potatoes, & melons & squashes &  
such fruits as peaches, pears,  
nectarines, apples & grapes are  
~~common~~ & good.

Camped among junipers about 5  
miles above James Pueblo

Sept. 10. Caught *Dryobates pallidus*,  
*Pezomachus trui*, *Pterogallus*  
and *Motacilla albicula*, a *fallax*. Shot  
*Anas diazi*, *Amphispiza bilineata*, *lucernus* and  
*Eulanius quadrivittatus* & saw *Citellus*  
*graminosus*, *Lynx arizonae* & signs of  
*Erethizon*. Packed up and continued  
down valley about 4 miles to *Jemez Pueblo*  
and then on to San Ysidro, 4 miles  
further & camped for the rest of the  
day to wake up specimens.

Found ruins of an old pueblo on a  
sandstone mesa a mile or two above  
Jemez. It had afforded a very strong  
position but is now a heap of rubbish.  
Fields of corn & melons, squashes  
and beans dot the valley.

The Jemez Pueblo is mainly one story  
adobe houses in irregular grouping.  
There is a poor store, and a few  
new buildings seem to be for a school  
or some official purpose. The pueblo  
is rather common & uninteresting.  
Below the creek winds out in  
a great sand flat with a shallow  
stream of water.

Sept. 11 - Left San Ysidro and turned west up the sandy valley of the Salado. Passed many mineral and soda springs, some of sparkling soda water, others of sulphur, iron, mud or other minerals. Some have built up fine cones of calcareous accumulations and a wide strip of country seems to be largely spring formations.

Left the Salado & followed up a long, dry, sandy draw till noon, then crossed a ridge and beyond found a great tank of fairly good water "Chuca Tank" about 1/2 miles from Cobegon. Here we landed & then decided to stay all night as there was no more water until we should reach Cobegon and we had made a hard pull through sand and up hill over bad roads.

Found *Anas diazi*, also *Entomis* & *Citellus grammurus* and rounds of *Dipodomys spectabilis*. Saw a few *Lepus arizonae*, several flocks of blue quail & Doves were numerous in patches of *Chenopodium*.

Sept. 12. Continued over dry mesa  
to Cabezon, a desolate little adobe  
town on the Puerco, where we lunched  
then turned south about 4 miles and  
camped by a good rain tank  
at the south base of Cabezon Peak.

This peak is a volcanic neck like  
the Devil's Tower only larger and higher  
but with less perfect basaltic pumice  
columns. It is one of some 20  
such necks along the Puerco valley here  
most of which are smaller but range  
from 400 to 1000 feet high and all  
extremely interesting. They are on  
a line with the Mesa Prieta on the east  
& the Sierra Chivato on the west & have  
been left standing in the valley  
eroded out by the Puerco. The  
edges or outer sides of others are  
seen still half hidden in the mesas.

Grass is good & water is  
scarce. The pools here & there in  
the bed of the Puerco are very alkaline.  
Mexican ranches along the valley are  
poor, but little crops of corn are  
raised & a few vegetables

Sept. 13 - Followed down the Rveros  
<sup>3 or 4 miles</sup> crossed at ~~S~~ Salazar,  
then struck S.W. up a gradual slope  
and over a ridge, or point of the  
Mesa of the Sierra Chispa and down  
to a Juan Tapoya creek a mile below  
the little town of the same name.  
Here we camped under a bunch  
of *Quercus gambelii*, just at the  
edge of Upper Sonoran & Transition  
zones, but among mainly Sonoran  
species.

Sept. 14 Rained a little in the night  
and kept showering all the forenoon  
but we packed up and went to  
Juan Tapoya & then on toward  
Zaragoza, through a gap in the  
mesa. Lunched by a rain tank  
out on open plains, then by  
following the directions of a man  
who did know the roads took  
the wrong one and missed Pajuta  
& Cebollita and struck the  
creek lower down, and camped  
on Cebollita Creek. Came close  
to Mesa Gigante, which is all upper

Sept. 15

Reached Laguna before noon  
and camped at edge of town to  
read mail and answer letters  
which took the rest of day.

Sept. 16, Packed specimens all of forenoon  
7 in P.M. went west a couple of  
miles up the valley and found a  
good place to camp on a clean  
salt grass meadow by an  
alkaline spring & flat. Brought  
good water from R.R. tank in town.  
Water horses at ditch halfway  
to river.

Sept. 17 & 18, 19 Remained at this camp  
writing reports, trapping, and  
trying to catch up in back  
notes & work.

Sept. 20 Loaded up with supplies  
& left Laguna at noon. Followed  
up valley to Cubero and then up to  
base of San Matos 4 miles north  
of Cubero & camped where the  
creek comes out of canyon. Fine  
water & grass & plenty of wood.

Sept. 21.

Took a saddle horse and started at 6:30 up the canyon of the San Matos. Followed old road about 6 miles up beautiful canyon and good trail about 4 miles farther to heart of old crater, where I left my horse and went to the top of the highest peak, about 1000 or 1500 feet on foot! The slope was gradual & I could have ridden to the top but for letting my horse rest.

From the top of the peak I had a superb view of the country all around, the whole west slope of the Jemez Mts., & Gallinas north of them of the Chacra Mesa & country north fit to the snow covered range of western Colorado, the long black range to the NW. on the Navajo Res., the whole great mass of black forested Zuni Mts., the Black range & Mogollons to the S.W., the Datus & Magdalinos to the S. & the Rio Grande Valley & mts. east of it. Looking down on the mesas around the San Matos - on the Sierra Chivatos I could with the glass distinguish yellow pines

+ Junipers and make many corrections  
and additions to my zone map &  
color in the still rarer Canadian  
zone area of the San Matos with  
considerable accuracy. This was  
the easier as the aspens now  
turned a golden yellow & their  
limits coincided with that of the  
spruces. The zone map of this region  
I now consider fairly accurate.

The San Matos are one  
enormous old crater with the  
rim complete 2 thirds of the way  
around and inclosing <sup>beautiful</sup> secondary  
cone of 1000 feet in height. The  
rim of the old crater is probably  
4 miles across, circular & of  
nearly uniform height, the highest  
peak reaching 11385 feet as shown  
by the contour map. Both inner &  
outer slopes are well sodded over  
- covered with good timber or  
grass. There is comparatively  
little exposed rock until the lower  
canyons & mesa cliffs are reached  
some 4000 feet lower down, where  
the lava sheets break off and show

the sandstone formation below.

The Sierra Chivatos are a great lava field just east of the San Matos & in part derived from them. Small craters over the surface of this plateau have also contributed to its formation. Its top is pale & yellow fine transition, heavily forested around the edges but largely open grassy plains in the central part where the lakes are.

The Central Canadian zone area of the mts. comes down to about 9000 feet on S.W. slopes and to 8000 feet on N.E. slopes. It is mainly forested with a dense growth of *Picea pungens*, *Abies amabilis*, *Pseudotsuga*, and *Populus tremuloides* and has abundance of willows and alders along the streams + *Acer glabrum* in the forest. See my book for other plants. In places the forest has been burned & has come up to brush & aspens and considerable of the upper slopes are covered with fine grasses.

Transition zone covers the mesa tops and runs down in tongues along cold slopes to 7000 feet. It is mainly characterized by *Pinus ponderosa* & <sup>& *Pseudotsuga*</sup> *Aceraceus gambelii*, but also by such plants as *Ceanothus*, *Berberis "spatulata"*, Chokeberry, Amelanchier, *Gilia agrestis*, *Pentstemon* (scarlet), *Ribes* (Haws), *Rosa*, *Lunaria* (4005) & others.

There is much valuable lumber timber in the yellow pines & Douglas spruce, some of which has been cut & more burnt. The oaks are often large,  $1\frac{1}{2}$  to 2 feet in diameter & 50 to 60 feet high. Around the north base of the mts. a few farms were seen among the yellow pines but generally they are uninhabited.

Upper Sonoran zone covers the surrounding valleys & runs up on the foot hills and hot slopes to a height of sometimes 8000 feet on steep S.W. slopes, or about 7000 on cold slopes. The trees are *Pinus edulis*, *Juniperus*

*monosperma* & *paelyphloea* - *Anneas grisea*, Its bushes are *Rhus aromatica*,  
*Talleegia paridosa*, *Atriplex canescens*,  
*Sarcobatus*, *Eurotia lanata*, *Bigelovia*  
*Purpurizca*, *Opuntia arborescens*, *O.*  
*clavatum* & *engelmanni "mimosa"*,

Many Mexican ranches are located  
in the upper Sonoran canyons and  
gulches around the edges of the  
mesas where ever water can be  
had for irrigation or even for stock  
& house use.

Corn, beans, peppers, & melons are  
the principal crops & a little fruit is  
raised.

Sept. 22 Remained all day at camp writing reports for San Matias, making a few specimens etc.

Sept. 23, Broke camp and came down through Cubera, where we mailed letters & reports and a package, then crossed the R.R. at Cubera station and struck the wagon road from Laguna to Acorna. Followed up a wide flat valley past the Enchanted mesa to Acorna. Went past about 3 miles & then found there was no water, so turned back & camped on the flat just east of the pueblo cliff by the reservoir where the cattle & horses & burros drink. A spring at one end gave us good water but the reservoir water was green & old. The reservoir is deep, with an island in the middle to keep stock from crossing. The island is covered with tall weeds & grass & tubs which shade the water & keep it cool.



The Acorna valley is extensive, very flat, with pebbly soil - abundance of grass, grama on the

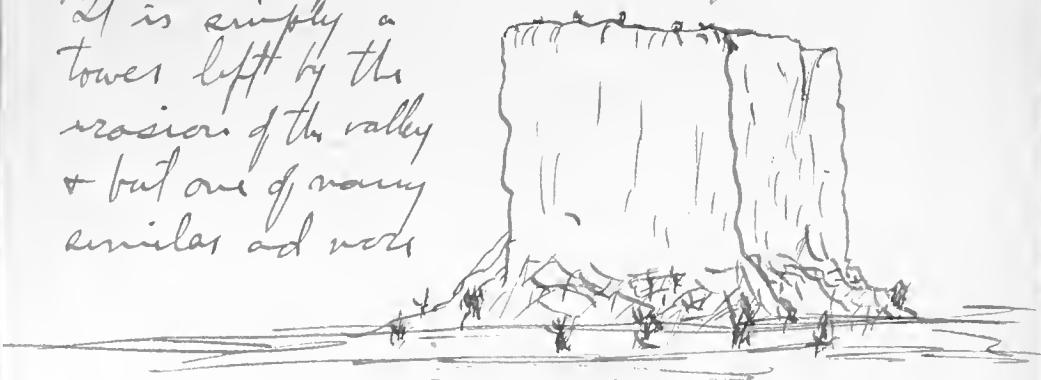
side slopes and siccations over the plots in great abundance for winter feed. The more moist areas are covered with fine corn & squashes & melons. This year the crops have been unusually good without irrigation. Fields are scattered here & there where now a patch of moist ground is available, are unfenced & of irregular form. The corn is generally sown one way and worked some with the long hoes which they use.

Junipers & nut pines border the valleys & over the ridges & mesas. The valley is hot Upper Sonoran with firm soil and some sub-irrigation. The dry farming methods would apply here to great advantage. But the Indians seem to raise enough in this primitive way & are content.

As we passed close to the base of the Embunited Mesa it towered some 400 or 500 feet above the plain in a superb yellow sandstone butte with sheer walls on all sides, save two places where water has cut out gashers & made it possible to get up by ladders & ropes.

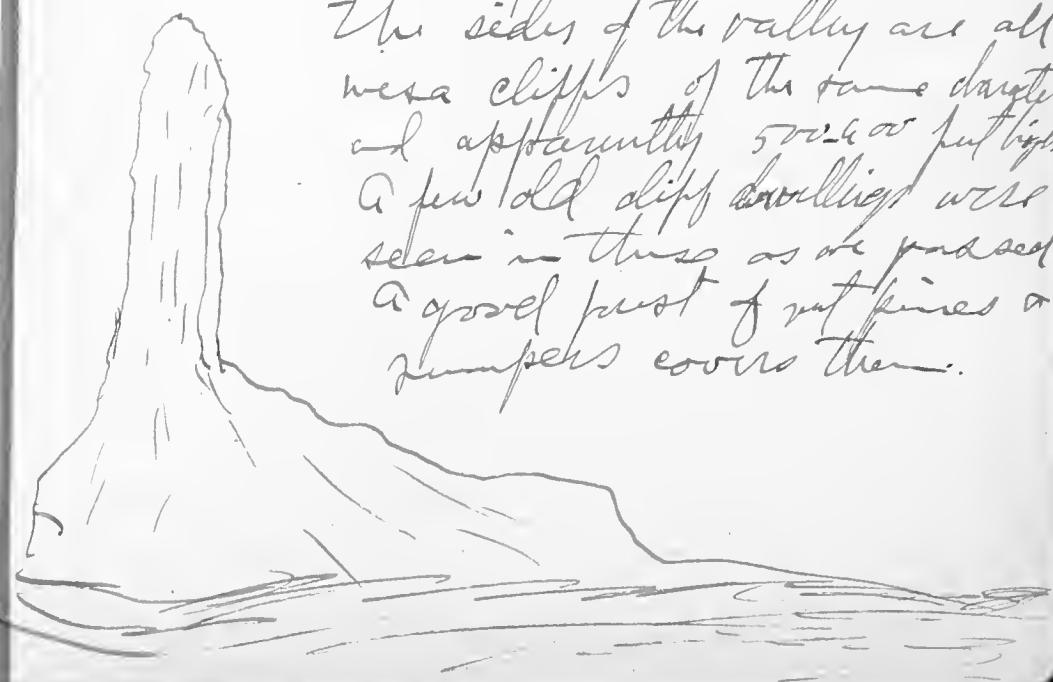
A few small trees Junipers or nut pines  
grow on top with other vegetation.

It is simply a  
tower left by the  
erosion of the valley  
& but one of many  
similar ad rock



elaborate mesas. Another west of the  
Pueblo is very similar and probably not  
climbable - and just beyond it is  
a giant Chopatras Needle of the same  
structure, 200 feet high & slender.

The sides of the valley are all  
mesa cliffs of the same character  
and apparently 5000 or 6000 feet high.  
A few old cliff dwellings were  
seen in these as we passed.  
A good nest of nut pines &  
Junipers covers them.



Sept. 24. On our way past the pueblo

of Acosia we stopped & climbed up the  
stairway on the south wall up the 200  
foot cliff (by the aneroid) to the pueblo  
perched on top. A less steep stone  
stairway & trail leads up the other  
side ~~and~~ where the burros & horses  
come up, and apparently these  
are the only ways to this most  
inaccessible of the pueblos.

The view is superb, over valley &  
mesas & mountains.

Three or four rock tanks still hold  
rain water, tho old & dirty.

The pueblo is extremely picturesque  
& interesting, tho only about 50 of  
the people are there during summer.

The rest are out on farms or out  
at sea in winter, but the return here for  
winter, when our friend Charles  
Dixon said - "It is so fresh and  
clean. No smells, no dirt, and such  
fresh air". The people are evidently  
fond of this old pueblo, but it  
is only a matter of time till they  
will come down & leave it.

On the side of the cliff near the

Earlier we saw Eriolamias probably lancealis,  
as others were seen & killed not far  
beyond, and at the base of the cliff  
I killed a Crotalus cerastes.

Yesterday I also collected a Sceloporus  
& a little Uta in the valley near the  
Enchanted Mesa.

Continuing up the valley, or a branch  
of it to the south, we entered a wide  
canyon & a few miles up this  
turned up a fiendish road, steep  
and stony & long to the mesa top  
some 600 feet above the bottom.

Had to unload a pack most of the  
baggage up on the horses & then  
had difficulty in getting the wagon  
up. Camped on the top of mesa  
as soon as we reached the top and  
was thankful for a hard shower  
that supplied our needs and provided  
our making a very dry camp.

The mesa top is beautiful juniper  
country with abundance of grama  
grass. The view over Cleopatra to the  
San Mateo Mts.  
is superb.



Broom Mtn. Camp.

Sept. 25-

Continued S.W. about 10 miles  
over open grassy valleys between junipers  
& nut pine ridges, part on Mexican  
ranch and camped by an arroyo.  
There is nothing to locate the camp  
by except Broom Mtn., a flat topped  
mesa 3 or 4 miles to the S.E. but we are  
some 15 miles S.W. of Tucson.

The valley we are now in seems to be one  
of the head waters of the arroyo called on  
the Land Office map Rio Colorado. A deep  
dry gulch cuts through the valley but  
we found water in old channel holes at  
one side, muddy, but good rainwater.  
The valley is wide and covered with  
grass & washes, lots of *Helianthella* &  
*Atriplex*, but is not much alkaline.

The low side ridges are covered  
with nut pines & junipers & a little  
blue oak & occasionally a few *Acacia*  
*Gambelii*. In several places we  
passed strips of yellow pines on  
cold slopes and on the higher ridges  
to the west we see ranks of tall yellow  
pines. We are close to the upper  
edge of Upper Sonoran but most of the  
plants, I think, belong to the zone.

Sept. 26. It rained hard in night  
and as we are in a gumbo valley the  
roads are bad, so remained in  
camp, setting wolf & other traps.  
Caught Peromyscus, Cynomys, Thomomys,  
but the rain spoiled my nights trapping.  
Found wolf signs made up of cattle  
hair in Neotoma house and heard  
Coyotes howl all around. saw  
*Lepus texensis* & *virgatus* & herd  
*Eudamias*. Shot a solitary sandpiper.

Sept. 27 Caught Neotoma &  
Oryzopsis & Thomomys but  
no Dipodomys, petrels or Mudips  
or Pterozathrus, all of which are  
common. Shot a Bobo in  
night. Made up skins and did not  
move camp till after noon. Then  
followed up the valley some 6 or 8 miles  
with very gentle slope to a ranch  
and about 4 miles beyond to a reservoir  
was the end of this draw and camped.  
Arrived on starting road 7200, at night  
at reservoir camp 7700. Followed open  
valley all the way with juniper & nut pine.

borders and yellow pines on top of the ridges and on cold slopes. Fine grass all along. beautiful country & very few people in it. A few old reservoirs have filled up and the old houses are generally abandoned. A few sheep and cattle range over the country but not enough to affect the grass.

Sept. 28. Leaving the reservoir camp we turned north over low nut pine ridges with a few pines ponderosa scattered along and on cold slopes nearly solid ponderosa. Lots of blue junipers scopulorum is here scattered in with the monosperma. Came down into deep gulch to Sibillo Spring in a gumbo valley. Then down this valley N.W. for about 6 or 8 miles then south along the edge of the lava beds to Punta Malpais, a mesa sand out on the edge of the great plain bordering the lava flow. Reached the ranch after dark & camped, as we found no water after leaving the Sibillo Cr. to the ranch windmill.

Sept. 29.

Started for Punta Malpais  
S.W. across a big treeless basin of  
old lava beds, full of sinks and  
dry lobes and a few ponds of water.  
This seems to have been an old lake  
bed 25 or 30 miles across and lowest  
at the Punta Malpais at 6900 feet,  
with junipers & nut pines timber  
encircling it on slopes down to  
7200 feet. Below what seems to be  
a pretty uniform level there is no  
timber, but the broken malpi is well  
covered & bedded in sand & gumbo  
except along the tops of rocky ridges  
that are bare & black. The whole great  
basin plain is gray & brown  
and olive green from the various  
desert plants & dry weeds. Bigelovia  
~~&~~ a small gray species, Gutierrezia,  
& brown Eriogonum & a gray &  
dried up Kunzea give the general  
tones to the landscape. The grass a grass  
is getting brown & patches of wild sunflower  
(Annuus & lanceolata) are dark brown while  
fields of Helianthella show light gray  
from their dry stems. We saw  
no permanent water or signs of habitation.

Rounded the end of the double crested peak just at sundown & crossing a low ridge at 7300 feet in the Junipers, nutpines, & a few ponderosa, descended a long, gradual slope to an old well & cabin and camped long after dark. Found an old prospector, Dr. Young, camped there with his two burros and he showed us the old well where we got nearly a pail full of malodorous water full of tiny things & dead & got supper but had no water for the horses. Came about 25 miles out west of it over stony roads & at a slow rate.

Saw lots of prairie dogs and several coyotes and looked for antelope but saw none. The old prospector said he saw a bunch of 5 or 6 on his way across the basin. He also says there are 25-30 on the San Agustine Mts, south of here. He showed us a fine skin of a silvertip he killed in the Datches a few weeks ago. It is in good fur.  
Aneroid 7000 at camp.

Sept. 30.

As we could get no water for our horses we pushed out early and after following west down a dry arroyo on the road to the Salt Lakes for a mile or two we turned south over ridges on an old trail road and in about 10 miles came to a big spring & camped for the ~~rest~~ last of the day! This may be Lathrop sp. or given on the Land Office map & may not.

Camp in morning 7000, down valley to 6900, then up over ridges at 7100 and camped at spring at 7200.

Followed open, dry valleys with good grass, Pigelocis, Yucca, Helianthus & Helianthella, Lysim pallidum & Atriplex canescens, not bordered by Nut pines & Juniper ridges. Saw a few yellow pines on cold slope of one mesa <sup>south of us</sup> & others on distant peaks. No water & rooms living in the country, the ruins of two large old pueblos were seen, one where we camped last night & one on the way.

Saw antelope tracks & lots of coyote tracks

Oct. 1. Left the spring camp and in about 2 miles crossed a ridge & then went down hill to the bottom of a big valley running east & west & turned east 2 or 3 miles to Rita Guerrado, P.O. & ad store. Got supplies, sent out mail & then turned west up the valley 2 miles to the Largo Valley and followed up it due south about 5 miles & camped at a Mexican ranch & got good water from the well. The Largo is dry up this far but raining farther above. Camped at the first good grove of cottonwoods, (*P. angustifolia*?). Came about 20 miles all together.

The Rita Guerrado and Largo valleys are continuous, broad, open plain like valley. The Rita is alkaline & generally bare of grass, weedy & covered in part with *Sarcobatus*, *Atriplex*, *Suaeda*, & various weeds. It seems to be over-stocked as a winter range. There are scattered Mexican ranches along, mainly vacant. The American Valley Co. owns the valley & whole region. There is a lake at the mouth of Largo

which seems to be the sink of the valley.  
The Rito Cr. flows west a mile or two  
from a spring but soon dries  
up & it is pretty alkaline to start  
with. The Largo Valley is sandy  
and free from alkalies & the water  
of the Largo is fresh & pure.  
The soil is rich & vegetation rank.  
Grass is abundant, mainly grama.  
The cottonwood groves along the river  
channel are beautiful, of the graceful  
angustifolia & now golden in full  
autumn colors.

Mat pines & junipers cover the ridges  
around the valleys and over rim to the  
north. The whole country covered is  
Upper Sonoran but a high peak &  
ridge to the south are covered with  
aspens high up on their cold slopes.

Oct. 2

Oct. 2. Caught only *Peromyscus sonoriensis*,  
& *Neotoma albipilosa*. ~~Two~~ *Perodipus* &  
*Perognathus* & *Thomomys* were abundant  
but refused to get in my traps.

Shot a coyote just as we started  
on the road. *Cynomys*, *Lepus arizonae*,  
& *texensis* are common; also badgers.

Followed up the Canyon Largo  
about 5 miles and camped under  
a grove of beautiful golden *Populus*  
*angustifolia* beside a clear stream of  
clear, pure water. The first good  
water we have had since leaving the  
San Mateo Mts. The valley here is  
a quarter to half a mile wide, rich  
and grown over in part by clumps  
of *Rhus aromatica*, and very large  
*Bignonia* bushes. The scattered  
groves of cottonwoods. Short pine  
ridges border the valley, & 3 or 4  
old pueblo ruins stand on the  
low mesas at edge of valley.  
They are mere heaps and rows and  
squares of lava rocks now, with  
numerous hollows - estufas or water  
tanks. The ground is covered  
with bits of highly decorated pottery.

+ flint chips. The valley must have been thickly settled & a delightful region at one time, but probably long before even the Spanish invasion. The bits of pottery collected will show something of the age & race. Many holes have been dug into the side of the pueblo hills and bones and pottery unearthed over the ruins have been but little disturbed. There have been many isolated houses on the ridges and points bordering the valley, so a complete view could be had at all times of the whole country. The outlook from these ancient habitations must have been most inspiring, of mountains, valley expanse & dark slopes of Tereyuan nut pines & junipers.

Det 3

Rode about 5 miles east of camp  
and climbed the peak shown on the  
land office map as Pinon Mtn. It  
is some 10 miles south of Guenado  
and is the northernmost spur of the  
Gila River System of mts. It is  
important as the first step of  
Canadian zone south of the Jemez Mts.

The peaks are part of the rim  
of an old crater that had broken out  
on the south and sent out streams  
of lava south & west. The eastern  
peak is some 200 feet higher than the  
western and by my aneroid read  
9750 feet. It is probably nearer  
10000, as the barometer works too slowly  
at its upper limits. It is registered  
to 10000 only + on the same plateau  
which on ~~10000~~ 11380 it read only  
10100. The mountain is all of lava  
resting on sandstone beds ~~open~~ <sup>full</sup> with  
copper. It is steep for the upper  
1500 feet and its north slope and  
part of the upper south slope are  
covered with *Adens*, *Abies concolor*,  
*Pinus flexilis* & Douglas spruce.  
The lower slopes & west of the

south slope are yellow pine transition,  
with Gambel's oak & some Pseudotsuga  
mixed in. (See note book for lists of  
plants). On the north and east  
the lower ridges are covered with  
nut pine, & the 3 junipers - monosperma,  
scopulorum & peckiana.

There seems to be no water on  
the mountain except in foothill  
gulches a few springs and the Lago,  
flowing past the east base. The  
animal life is scanty - poor.  
Chipmunks were heard low down, but  
none above the foothills & these were  
probably dorsalis. Porcupines grazing  
were seen on nut pines around the base  
& deer tracks were common in the  
lower gulches. Lepus arizonae or  
texensis were seen around the base  
& lots of Neotoma houses. Fox  
tracks were common & also coyote  
& signs evidently of gray foxes  
were seen half way up. Gopher  
hills are common & doubtless of  
fulvus.

Bluegrouse feathers were found near  
the top on north slopes.

Oct 4

Remained at camp working  
specimens & 2 days accumulation  
& setting traps & writing up notes.  
Saw 8 coyotes in a drove while  
out to ~~trap~~ Proclipes traps near  
camp in morning.

Oct. 5. Caught Proclipes & Perognathus,  
took up traps & started up Largo Canyon.  
About 5 miles above we turned west  
up a side gulch over a low divide  
~~to the west~~ up another open valley to the south.  
Followed some 6 or 8 miles up this & near  
its head and camped in a mountain  
valley enclosed by lava rims at the  
head of the stream at 8000 feet. The mountain  
rise about 1000 feet higher on the ~~south~~<sup>east</sup>  
and not quite so high on the west.  
This north slopes and gulches are  
Canadian zone, covered with  
Aspens, *Abies concolor*, *Pseudotsuga*  
& *Pinus flexilis*. The valley in which  
we are camped & greater part of  
the mts. is Transition yellow pine &  
Gambel's oak, while Papp's Sonoran  
nut pines & junipers come up on some  
of the hot slopes nearly to the divide.

The valley where we camped is a circular  
park one to 2 miles across, open &  
grassy in the middle, encircled  
by open yellow pine woods. A good  
little stream rises in the middle  
of the valley & flows out to the north.  
From our camp - to west side of  
the valley a golden rim of aspens  
borders the opposite slope near the top.  
Cattle & horses graze over the valley  
but the grass is standing knee high  
& full of seeds as if untouched.

A fresh lobo track followed the  
road ahead & led up through the valley  
and we camped early & set out a  
line of ~~for~~ traps for wolves.

Oct. 6 & 7. No wolves came along  
so we remained & reset traps  
as fast as the horses & cattle  
tramped them out. Caught a  
woocyon in one, the only thing  
that came along.

Oct. 8. Heard wolves howling in the night near camp & felt sure of one, but found they were too wary for my traps. They came to the scent of one trap but kept at a safe distance from it and went around another. It was a pair of old wolves with 2 young of the year & the old male made a huge track & evidently is a wise old leader, well up to trappers tricks. I have little hopes of getting any out of this bunch at present.

A coyote followed the wolves & got into one of my traps. Photographed him & made a specimen of him.

Oct. 9. Caught nothing. Broke camp at passing south through Jewett Gap followed down into big dry valley & struck the road from ~~Santa~~ Luna Valley and followed it east along the foothills of the so called Devil's range to Gallo & Apache Springs where we lunched & then continued east till we struck the Juleosa & Magdalena road then south & reached Juleosa at dusk.

Came about 30 miles but over some rough lava ridges & had to move slowly. Found water only at the 2 springs & at a tank near Tulecosa. A big day, nearly uninhabited country mainly Upper Sonoran except cold slopes which are all transition.

Aneroid at camp read 8000, on divide in Jewett Gap 8100, in big valley 7650, at Gallo Spgs 7700, on ridge 7800, at Tulecosa 6800.

Oct. 10. Followed down Tulecasa Valley to Jissos, (6750 to 4000 feet) and returned 2 miles to camp on ridge.

The Tulecasa valley is full of farms and good flat land but farmed. It is mainly an upper Sonoran valley but the cold slopes & flat bottom are transition with yellow pine & *Populus angustifolia*.

Corn & alfalfa do well & we saw cabbages & turnips & beans & squashes, but the valley is said to be frosty so it is necessary to raise early corn. The corn is ripe but frost has killed the vegetation.

Oct. 11, Returned to Mr. Delgars ranch at Joseph and camped in his field on the old pueblo.

Met Mr. Shad & Mr. Andrews at Mr. Delgars & saw the three forest rangers, Monday, Cassell & \_\_\_\_\_ who stay at the cabin just below. Prepared for a trip up the mountain tomorrow & went rabbit hunting. got 2 gambeli out of a flock of a dozen.

Oct. 12. Took saddle horse and went up Eagle Peak in the Tulosa Mts. Crossed Tulosa River 3 miles below Delgars, then followed up Largo Canyon about 4 miles east to spring, then struck across mesas & canyons south to peak. Left horse in gulch at base of mountain & followed up north slope to foot reaching top at 3:30 P.M.

Aneroid at Delgars read 6550, at mouth of Largo 6450, at spring 6650, left horse at 8550, top of peak ~~to~~ reached 9650. Eagle peak is a sharp point just beyond and about 100 feet higher.

Mapped zones for the whole Tulosa range & some of the surrounding country.

Returned to my horse at 6 P.M. & got about 5 miles out onto the ridges when it got too dark to travel & I camped under a juniper tree till morning. Had no water since leaving Largo Canyon in the morning & went to sleep pretty thirsty.

Found no water in the gulches, but they are covered with on the top & north slope with a heavy forest of *Abies concolor*, *Pseudotsuga* & *aspens*. On the south slope & north base with yellow pines and *Quercus gambeli* & *Pseudoeucalyptus menziesii*, in open transition zone forest. The south slopes of lower ridges & mesas are all upper Sonoran, nut pine, Juniperus monosperma & *pauciflora* & *Bursera* grisea.

Saw one blue grouse & signs of others in spruces high up & lots of *Cyanocitta*, but most of the migrants are on the move or gone.

Saw 3 *Odocoileus hemionus* in Largo Canyon, & 2 *O. canesi* at 8500 on the mountain at the first aspens. & lots of tracks of canesi above the peak.

Saw some bear sign & a big silver tip is said to live in the gulch on this slope. Saw one *Lepus punctatus* at 9000 feet & *Sciurus vogolmenensis* is common in Canadian zone. *S. aberti* is common in transition. *Eutamias quadrivittatus?* is common in Canadian & dorsalis in upper Sonoran zones & both occur in transition. *Citellus grammurus* is

~~common~~ in upper Sonoran & still active. *Calospermophilus lateralis* was seen at 9000 feet in Canadian zone. *Thomomys fulvus* goes to the tops and a large house of *Neotoma orobates* was found in woods at about 9400 ft. *Procyon* tracks are ~~common~~ along the Tullocoa River & *Procyon* & *Lynx* are ~~common~~ in the canyons. Coyotes howl at night and one feeding on a dead cow at the ranch. There are said to be a few *Lobos* but not many. Mountain lions are said to be common and a good many are trapped. Black & brown bear are also ~~common~~.

Badgers & prairie dogs are common in the valley.

Oct. 13. Left my dry camp early & reached camp at 8 A.M. Packed up & started at 2 P.M. down the Tullocoa valley, past Triles & camped in canyon 5 miles below at 5800 feet. Found numerous Mexican ranches down the river to near the beginning of canyon, these no more

Oct. 14. A cold night in canyon followed by hot day. Lee poured over 2 pails of water brought from river to get breakfast with. While eating breakfast a fine mule deer buck came down and drank out of the river close in front of us. We thought in the dim light it was a doe until it climbed the hill opposite & got out of range.

The ~~late~~ San Francisco canyon reaches about 15 miles to Kelley's ranch and is cut through lava flows most of the way with steep rough sides a few hundred to a thousand feet high. In one place I counted 22 flows, one above another. The bottom is sandy with flats and points and strips of good soil that carries various trees according to slope exposure. The bottom seems to be mainly transition zone with abundance of *Populus angustifolia*, boxelder, and some *Pinus ponderosa*, & *Quercus gambelii*. Still the hot slopes and benches are intensely hot Upper Sonoran with nut pines, Junipers, blue oak, & *Yuccas* & *cacti*.

At Kilbys ranch (5600 feet) we began to strike Lower Sonoran trees on hot slopes, dwarf mesquite, *Acacia biuncinata*, & *Prosopis* ~~florescens~~ or live oak & cottonwood, while the narrow leaved was partly replaced by the wider leaved cottonwood along the streams. The Lower Sonoran element increased to Alvar where mesquite is common & a roadrunner was seen.

The canyon is full of acorns, pine nuts, juniper berries, grapes, & such food for birds & beasts & animal life is profuse.

Several flocks of *Parus wolweberi* were seen & 4 birds collected - the first I ever saw alive.

After passing Kilbys Ranch we went out on the mesa & in 5 or 6 miles it grew dark & we had come to no water so we camped and ate canned tomatoes & corn & went to bed.

Oct. 15 - After dry breakfast & started  
on - In about half a mile came  
down into San Francisco River canyon  
again & had plenty of water to Alva  
6 miles beyond. Have crossed the  
river 52 times since leaving Tucson.  
Roads sandy but generally not bad.

The valley at Alva is open  
and plains with a mixture of Upper  
& Lower Sonoran species. *Yucca radiosa*  
is abundant and away droplets common  
while blue oak & juniper and pines  
cover the cold slopes of the hills & ridges.  
*Opuntia scottii* takes the place of  
arboreous. The few gardens along  
the river valley have been badly  
washed out by floods. Grass is  
scarce & short. Alfalfa is  
the principal crop but corn & potatoes  
& squashes & melons are raised  
and we saw peach & apple trees.

Camped under live oak in field alfalfa  
mile above Alva on road to Mogollon & Coney.  
Packed up specimens & sent off 16 packages  
a hot day. Valley dry & baked!

Oct. 14

Left camp at 10:30 A.M., & climbed onto big mesa, then over this to base of Mts. & up long, well graded road to Mogollon, then 4 miles on up the gulch and camped in canyon about 5 miles from summit. At camp aneroid read 5200 feet, at highest part of grade 7300 feet, at Mogollon 6850 & at camp in gulch 7850.

Upper Sonoran zone runs up on lot slopes to at least 7500 feet, which is characterized by *Pinus edulis*, *Juniperus monosperma* & *joepappacea*, *Quercus emoryi*, *Yucca baccata*, *Nolina*, *Dasylinion*, *Opuntia schottii*, & *Cercocarpus parvifolius*. Much of the zone is barren or open short grass mesa or slopes.

Transition zone covers the cold slopes down to the level of Mogollon, a little below 7000 feet and runs up on open north slopes to at least 8000 feet. It is characterized by scattered yellow pine, abundance of scrubby *Quercus gambelii*, *Pseudotsuga menziesii*, *Araucaria*, *Garrya*, *Quercus turbinella*?

Canadian zone comes in on the high N.E. slopes mainly in gulches, as above Mogollon Abies concolor & inc. glabra and aspens follow up the gulch from about 7000 feet upward, but the cold slope above the gulch is mainly transition.

Oct. 17.

Continued <sup>easterly</sup> up the gulch 4 miles to sawmill, then over ridge 2 miles beyond and along an old, unused, graded road for about 6 miles until dark & camped on ridge above Willow Creek. Climbed steep grades to summit but on the old road along north slopes of mountain maintained a very uniform level.

Camp in morning 7800, Sawmill 8700, Summit 9250, highest part of graded road 9300, Camp on ridge 7000.

About 8000 feet the cold slopes were all Canadian zone but transition reached above our highest point on south slopes.

Had to travel slowly & fix road on old grade so came only about 12 miles.

Oct. 18. Started out on foot in morning & explored down Willow Cr. and up it past camp. Then in P.M. moved the wagons about a mile east to end of graded road, then left them & packed down the ridge to Willow Creek 500 feet below & camped at upper edge of transition in timber. The beautiful creek runs in front of our camp. Transition timber covers the slope back of us and Canadian timber the slope in front while Mogollon Mountain rises high & black to the south, close by.

The creek is full of trout, deer tracks are common, and a few turkey & grouse tracks are seen along the creek.

The bottom of the creek valley below has been cleared & old deserted cabins and abandoned fields remain but the rest of forest is untouched and much of it magnificent.

The yellow pines & Douglas spruce are large and abundant and when available will be valuable timber.

Oct. 17. Remained at camp in A.M. making out Dept. acct. & writing letters to go to Mogollon tomorrow. In P.M. went down to Forest Ranger cabin 4 miles below.

Oct. 20. Sent John to town for mail & supplies with pack horse & he did not get back till dark.

Went up on ridge and killed a little white tail deer and carried it down to camp on my back. It was an old doe & weighed dressed 41 lbs., or with head and hind just 50 lbs.

Oct. 21 - Sunday. Snowed most all day, built a fireplace in old cabin just below camp in case we should need to move in on account of storm.

Oct. 22 - Hunted all forenoon but saw only does & fawns which seem to be abundant. It snowed all of P.M. and added another inch on the ground.

Oct. 23. Went up the ridge that seemed to be the highest & that I supposed was Mogollon Peak but found on top a Sierra Club tub & scroll on which this was called "White water Baldy" (an evident misnomer as the peak is densely timbered & I can find no trace of any white water to name it from) The peak is recorded on the scroll as 10950 feet high but my aneroid read 11000' & probably did not read too high. Another peak a few miles to the S. & a little west is equally high and more massive while another 5 or 6 miles to the S.E. is possibly higher and may be the real Mogollon Peak.

In going up the peak I followed ridge on N.E. slope all the way through dense timber, & got good game notes. Saw a fine white tail buck (canescens) but missed him. Started a lot more deer but did not see them. Followed tracks readily on the 2 inches of fresh snow but the walking was noisy & the air very still so there was no chance to get onto deer. Followed a fresh panther track several miles until it turned south & then

I left it. Found cottontail tracks up to 10000 feet but could not get sight of a rabbit. Saw no tracks of snowshoe rabbits or grouse or turkey. Found the bones of a small bear that had been trapped but no skull.

Got back about 5 P.M. very tired as the walking was heavy.

Next 4 days tramped around camp.

Oct. 28. Took a horse & went S.E. to try and get on the highest peak in that direction but after crossing one deep canyon I found there were two more between me and the peak so gave up the trip as it would keep me out over night. Turned east thinking I would go down to the Gila (Middle Fork) and up it to camp, but it clouded up & began to rain so I struck back the nearest way to camp and got back at 5 P.M.

Accomplished very little, started lots of deer but saw only one white tail doe & did not want her.

Oct. 29. Monday. Sent John to cut several big trees out of the road so we could get back to Mogollon before a storm should box us up for the winter. Made up specimens in forenoon and in P.M. packed our outfit up to the wagons on top of ridge 500 feet above camp at 9000 feet so we could get an early start in the morning. It rained toward evening & snowed higher up. John got back to wagons at dark & had not cut all the trees out of road.

Four prospectors came up the creek from the Gila with burro packs & from them we learned that Willow Creek is the main fork of the Middle Gila and not a branch. It begins as Willow Creek, is then called Gilita, then the Middle Fork.

Oct. 30. A clear night and only a light frost. Started at 4 A.M. and reached the top of ridge above sawmill at 1 P.M. without trouble or accident. Had to dig out the sides of road in places and cut but a couple of trees. Found an inch of snow along the higher parts of road - 9300 ft. Lunched at top & then went smoothly down the lower road to Mogollon, from 7000 to 6000 (10 miles) by 4:30. Got mail & supplies & started on but got stuck in canyon near mill & had to camp in Deadwood gulch just above it at 7000 ft. Averaged road the same as on the way over. Found the upper end of Upper Sonoran as before at mile up the gulch from Mogollon at 7000 feet. Here we struck *Magnolia*, *Abras* tree, *Juglans rupestris*, Nut pines, junipers, *Acacia* *grisea*, *Cercocarpus* & the whole set of Sonoran plants.

Also saw a few *Rhamnus purshiana* & a bush of *Acis grandidentata* along the creek. The shrubby oak, *A. lucophylla*? seems to be transition as it is mainly above Mogollon, on cold slopes below.

Oct. 31 - Down to mouth of White water Creek & camped at ~~5200~~<sup>4700</sup> feet at its junction with San Francisco. The San Francisco river here runs through a crooked, narrow canyon with only little patches of bottom land, but 2 miles below it opens out in a broad, fertile, well farmed valley. The White water valley is wide enough for a series of good ranches and is mainly under cultivation. Good orchards of peach, apple & pear trees are seen and the apples we got at the store are excellent. Some are enormous and were sent to the county fair at Socorro. Other crops raised are alfalfa, potatoes, onions, beets, turnips

cabbage, cauliflower, beans, chili, corn and sugar cane.

The zone of the valley is a mixture of Lower and Upper Sonoran. The Lower Sonoran element is shown by abundance of mesquites on the south slopes, often 8 or 10 feet high and full of beans. That on the mesas and flat ground is usually dwarfed and without beans, 2 or 3 feet high. Cat's claw (*Mimosa biuncifera*?) is abundant and full of beans. A few Dasylinians are scattered over rocky south slopes, also *Cereus* (*peltata*?), *Opuntia* *sebottii* and *engelmanni*, and *Yucca* *radiosa*. *Pharodendron* is abundant on Cottonwood live oaks and mesquites and full of hairy ripe berries. The slender leaved *Platynus* is common along the streams and *Populus fremontii* has mainly replaced *angustifolia*. The Arizona walnut is abundant and very fruitful.

Many species of Lower Sonoran mammals and birds are here.

*Rithrodontomys*

*Neotoma* (*cinnamomea*?)

, *Oryzopsis* *torridus*,

*Conepatus*

*Spilogale*,  
are common.

*Calipepla gambeli* are abundant, *Geococcyx* is common. *Dryobates* *bairdi* has been seen twice.

Upper Sonoran dominates the valley however with nut pine, juniper, monosperma and pachypodium and *Acacia* *gusea* and *emarginata* covering north slopes, flats and mesa tops generally; and *Populus fremontii* and a few *angustifolia* along the streams, also *Alnus* (trees), boxelder, ash, *Sapindus*, *Morus*, *Dalix nigra* and yellow willow. Both *Rhus aromatica* and *R. \_\_\_\_\_* (Velvet leaf) and *Rhus glabra* are common along banks and also *Cowania*, *Ceanothus rigidus*, *Cercocarpus parvifolius*, etc. A large gutterized is the conspicuous open mesa plant. *Nolina* is absent. Most of the species of birds and mammals are Upper Sonoran.

## Cactus Flat

Nov. 1 to 5 - Remained at White Water Creek camp (Glendale P.O.) Trapping and collecting along San Francisco River, the creek & over mesas.

Lower Sonoran zone shows up strongly on hot slopes where the mesquite bushes are large & full of ripe bean pods. Many species of Lower Sonoran birds & mammals occur here.

Nov. 5 - Started for Cliff, followed down the Grised Valley past the Mormon settlement (Pleasanton) then up Dry Creek to Lees Station about 10 miles. Aneroid read 5000 at starting and 5100 at Lees Station where a U.S.G.S. post gives the altitude as 4884, so I set aneroid and carried the east camp reading to 4700 feet. From Lees Station we came up over mesas and ridges about 6 miles to Cactus Flat on the divide between Dry Creek & Dick Cr. and camped at 5200 feet.

Cactus Flat is open plains & mesa country with no water, but lots of grass and forests of *Opuntia schottii* & *Fusca radiosa*.

The yuccas are tree like, 6 to 10 feet high below the flower stem and the cactus is unusually large, often 10 feet high and in large bunches. The soil is rich & the abundant short grasses hold the surface soil & moisture so that vegetation is rich. A few distant ridges have junipers & nut pines on tops or snowy slopes but a wide extent of country reaching to the S.W. east of the Mogollon flats, is open & grassy. The Mts. rise with a steep and ragged front but with the higher peaks a little back. What is called Sacaton Peak is the big mountain I saw both S. & W. of "Whitewater Baldy" Oct. 23. It is on the very front of the range and a little snow shows over its shoulders. To the west low ridges are mainly treeless. The Tucero canyon cuts through them.

W. found *Tropidurus cristatus* & *Campylotus heliodorus* in the cactus & yuccas & lots of cactus borers

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of a *Nectona* that I do not know, so camped & hunted & set traps. *Cyphomyia ludoviciana* were seen here for the first time this summer. The last gunnisoni seen were above the Frisco Canyon at Frisco & Joseph.

To Cliff-

Nov. 6. Crossed the mesa 100 feet above camp and then down the long, gradual slope of Duck Creek for 20 miles to Cliff on the Gila River. Crossed the river and camped a mile beyond the crossing <sup>near</sup> ~~at~~ the bend of the river as it turns southwest. Started with aneroid at 5200 and found that it agreed with the G.S. posts at the White House, (4596) 4 miles north of the P.O. of Cliff, and at the hotel near our camp (4476), some 30 feet above the river.

Duck Creek valley is dry, open and grassy down to its junction with Sacaton Creek, some 6 or 7 miles above its mouth. Then it bears a small stream of water and cottonwoods & sycamores along the banks, is mainly fenced & in pasture, but no one lives on it except near its junction with the Gila.

The Gila valley is wide and fertile below the canyon with numerous farms & ranches, dense groves of Cottonwoods & willows & sycamores & some Walnut, ash & boxelder.

The bottoms are sandy but rich from annual floods and generally covered with rude vegetation. Sunflowers & ragweeds grow 10 or 12 feet high in perfect jungles, Johnson grass grows higher than my head as also do cockleburs. The giant old cottonwoods (*P. fremontii*) are sometimes 6 or 8 feet in diameter with spreading tops, now golden in autumn foliage, are the most striking feature of the valley. The river is clear and rapid with now & then deep pools. There is abundance of water for irrigation and crops are good if well worked. Corn is the main crop raised and grows to great size, but is often a swamp of weeds. Alfalfa & vegetables are also raised and chile where there are Mexicans.

Lower Sonoran zone is indicated on hot slopes by some mesquites, by *Tessaria borealis*? and *Chilopsis* *Salicva* along washes, by abundance of *Florodendron* full of beautiful berries loading the cottonwoods, willows, oaks and mesquites, dry *Yucca raddosa* on mesas

& by *Rhamnus californica* in gulches,  
Also by *Lophortyx gambeli* <sup>alligator</sup>, *Grococcyx*,  
*Pipilo aberti*, *Dryobates s. bairdi*, *Melospiza*  
in summer,

And by *Kuthredontomys*,  
*Perognathus*, *Perodipus*, *Vulpesmacrotis*,  
*Carnipatus*, *Diplogale*.

Nov. 7 & 8 Remained at our camp near the Gila making up specimens from Cactus Flat & along the road, setting traps & hunting in the bottoms along Gila River, and writing reports. Caught 2 kit foxes & a few other mammals.

Nov. 9. Started for Silver and after following up the dry wash of Greenwood Creek crossed the ridge to Mangos Valley and continued up, by a few miles to stage station where we watched the horses & filled our keg & pushed on about 5 miles and camped in a dry wash where there was lots of grass. The Mangos Valley is mainly dry but springs come out in places & windmill ranches are scattered along the valley, which is surrounded by good stock country, open ridges & mesas covered with good grass a few miles back.

*Yucca radiosa*, *Opuntia robusta*, & dwarf mesquites are more or less abundant along the valleys up to our camp, where more *Nolina* & oaks come in as we get into more pure Upper Sonoran

Sit the merid at camp at 4470 top of ridge 4900, Mangos Valley 4800, left valley at 5000, camp 5400.

Nov. 10, Started early & reached  
Silver City before noon, Caashed  
check at bank and got mail,  
then drove a mile up valley &  
the best ranch in sight and  
asked permission to camp.

Were given a delightful place  
in meadow by pond with cottonwood  
for shade. & birds all around us.

Learned later that Mr. Pimberston,  
our host, was a partner in the bank  
with Mr. Kerr, who had previously  
been of material aid to me.

Mr. Pimberston offered his barn  
for storage of my outfit

Went to town and got Mr.  
Culverson on the phone and  
scuttled the Hatchetts water.  
Mr. Culverson said Hatchetts  
had been trapping for wolves and  
since I left last May had  
had caught at least 4. That he  
knew of. Said they had paid  
county on some of these &  
kept Hatchetts going.

Nov. 11. Sunday

Packed up our personal  
stuff, stored camp outfit in  
the stable of Mr. Pickerton  
discharged my雇 man & sent  
him home and took a P.M.  
train to Durango.

Nov. 12. Found white masked ravens  
abundant in the streets of Durango  
and tame as doves for chickens.  
Took 11:30 S.P. train to El Paso &  
waited there for the overland sunset  
Limited for New Orleans and Washington.  
Left El Paso at 7 P.M.

Nov. 13. Daylight via Sanderson  
and then dark before we reached  
San Antonio (at 8 A.M.)

Slight traces of frost at Dallas  
and Colorado but leaves all killed  
and dry on Zopodium at Mexican R.  
Good cotton & other crops.  
Cotton not yet killed.

Nov. 14, Daylight at Doaston,  
slight trace of frost. Cypress  
leaves partly brown & part yellow.  
Good rice crop. - Threshing.  
No cotton seen.

Reached New Orleans after dark  
and left there on Washington Express  
limbed late in evening.

Nov. 15

Nov. 16, Reached Washington at 1 PM

